

AMENDMENTS TO THE CLAIMS

1. (Original) A photo mask for patterning a lightning rod comprising:
 - a shorting bar pattern and a plurality of pad patterns;
 - an outer lightning rod pattern connected to the shorting bar pattern;
 - an inner lightning rod pattern connected to one of the pad patterns;
 - projections from each of the outer and inner lightning rod patterns, and a fine pattern connected between the projections; and,
 - a redundancy fine pattern connected between the pad patterns.
2. (Currently amended) A photo mask for patterning a lightning rod comprising:
 - a shorting bar pattern and a plurality of pad patterns;
 - an outer lightning rod pattern connected to the shorting bar pattern;
 - an inner lightning rod pattern connected to one of the pad patterns; and,
 - projections from each of the outer and inner lightning rod patterns, and a fine pattern ~~in a~~
““form connected between the projections. connecting the projections, wherein the fine
pattern comprises:
three parallel lines, wherein one end of a first line is connected to one projection;
the other end of the first line is connected to one end of the second parallel line by a
vertical line substantially perpendicular to both the first and second parallel lines;
the other end of the second parallel line is connected to an end of the third parallel line by
a second vertical line substantially perpendicular to the second and third parallel lines; and
the other end of the third parallel line is connected to the other projection.

3. (Original) A photo mask for patterning a lightning rod comprising:
 - a shorting bar pattern and a plurality of pad patterns; and,
 - a plurality of lightning rod patterns between the shorting bar pattern and each of the pad patterns.
4. (Currently amended) A photo mask as claimed in claim 3, wherein each lightning rod pattern includes[[;]]:
 - an outer lightning rod pattern connected to the shorting bar pattern,
 - an inner lightning rod pattern connected to the pad pattern, and
 - projections from the outer lightning rod pattern and the inner lightning rod pattern, and a fine pattern connected between the projections.
5. (Original) A photo mask for patterning a lightning rod comprising:
 - a shorting bar pattern and a plurality of pad patterns;
 - an outer lightning rod pattern connected to the shorting bar pattern;
 - an inner lightning rod pattern connected to one of the pad patterns; and,
 - projections from each of the outer and inner lightning rod patterns, and a fine pattern connected between centers of the projections.
6. (Original) A photo mask as claimed in claim 5, wherein a distance between the projections is greater than a distance between the outer lightning rod pattern and the inner lightning rod pattern.
7. (Original) A photo mask set for patterning a lightning pattern comprising:

a first photo mask having a shorting bar pattern and an outer lightning rod pattern connected to the shorting bar pattern formed thereon; and,

a second photo mask having a pad pattern and an inner lightning rod pattern connected to the pad pattern formed thereon.

8. (Original) A photo mask set as claimed in claim 7, wherein the first photo mask is a photo mask for patterning a gate line, and the second photo mask is a photo mask for patterning a data line.

9. (Original) A photo mask set for patterning a lightning pattern comprising:

a first photo mask including;

a shorting bar pattern and a plurality of pad patterns,

an outer lightning rod pattern connected to the shorting bar pattern,

an inner lightning rod pattern connected to the pad pattern, and

projections from each of the outer and inner lightning rod patterns, and a fine pattern connected between centers of the projections; and,

a second photo mask having a contact hole at a position matched to the fine pattern on the first photo mask.

10. (Original) A photo mask set as claimed in claim 9, wherein the first photo mask is a photo mask for patterning a gate line, and the second photo mask is a photo mask for patterning a pixel electrode.

11. (Currently amended) A photo mask for a liquid crystal display (LCD) panel, comprising:

first and second pad patterns for signal lines of the LCD panel;

first and second inner lightning rod patterns, each connected to a corresponding one of the first and second pad patterns;

first and second inner lightning rod projections each extending from and connected to a corresponding one of the first and second inner lightening lightning rod patterns;

first and second outer lightning rod patterns;

first and second outer lightning rod projections each extending from and connected to a corresponding one of the first and second outer lightening lightning rod patterns;

a shorting bar connected to the first and second outer lightning rod patterns;

first and second fine patterns each connecting a corresponding one of the first and second inner lightening lightning rod projections to a corresponding one of the first and second outer lightening lightning rod projections; and

a redundancy fine pattern connected between the first and second pad patterns.

12. (Currently amended) A photo mask for a liquid crystal display (LCD) panel, comprising:

a pad pattern for a signal line of the LCD panel;

an inner lightning rod pattern connected to the pad pattern;

an inner lightning rod projection extending from and connected to the inner lightening lightning rod pattern;

an outer lightning rod pattern;

an outer lightning rod projection extending from and connected to the outer lightening lightning rod pattern;

a shorting bar connected to the outer lightning rod pattern; and

a fine pattern connecting the inner lightening lightning rod projection to the outer lightening lightning rod projection, wherein a length of the fine pattern is substantially greater than a distance between the inner and outer lightening lightning rod projections.

13. (Currently amended) The photo mask of claim 12, wherein the fine pattern ~~has a shape of “—.” comprises:~~

three parallel lines, wherein one end of a first line is connected to one projection;
the other end of the first line is connected to one end of the second parallel line by a
vertical line substantially perpendicular to both the first and second parallel lines;
the other end of the second parallel line is connected to an end of the third parallel line by
a second vertical line substantially perpendicular to the second and third parallel lines; and
the other end of the third parallel line is connected to the other projection.

14. (Currently amended) A photo mask for a liquid crystal display (LCD) panel, comprising:

a pad pattern for a signal line of the LCD panel;
a first inner lightning rod pattern connected to the pad pattern;
a first inner lightning rod projection extending from and connected to the first inner lightning rod pattern;
a first outer lightning rod pattern;
a first outer lightning rod projection extending from and connected to the first outer lightening lightning rod pattern;
a second inner lightning rod pattern connected to the first outer lightning rod pattern;
a second inner lightning rod projection extending from and connected to the second inner lightening lightning rod pattern;

a second outer lightning rod pattern;

a second outer lightning rod projection extending from and connected to the second outer ~~lightening~~ lightning rod pattern;

a shorting bar connected to the second outer lightning rod pattern;

a first fine pattern connecting the first inner ~~lightening~~ lightning rod projection to the first outer ~~lightening~~ lightning rod projection; and

a second fine pattern connecting the second inner ~~lightening~~ lightning rod projection to the second outer ~~lightening~~ lightning rod projection.

15. (Currently amended) A photo mask for a liquid crystal display (LCD) panel, comprising:

a pad pattern for a signal line of the LCD panel;

an inner lightning rod pattern connected to the pad pattern;

an inner lightning rod projection extending from and connected to the inner ~~lightening~~ lightning rod pattern;

an outer lightning rod pattern;

an outer lightning rod projection extending from and connected to the outer ~~lightening~~ lightning rod pattern;

a shorting bar connected to the outer lightning rod pattern; and

a fine pattern connecting the inner ~~lightening~~ lightning rod projection to the outer ~~lightening~~ lightning rod projection, wherein a [[the]] fine pattern extends from a center of the inner ~~lightening~~ lightning rod projection to a center of [[to]] the outer ~~lightening~~ lightning rod projection.

16. (Currently amended) A photo mask set for a liquid crystal display (LCD) panel, comprising:

 a first photo mask, including,

 a pad pattern for a signal line of the LCD panel;

 an inner lightning rod pattern connected to the pad pattern;

 an inner lightning rod projection extending from and connected to the inner lightning lightning rod pattern;

 an outer lightning rod pattern;

 an outer lightning rod projection extending from and connected to the outer lightning lightning rod pattern;

 a shorting bar connected to the outer lightning rod pattern; and

 a fine pattern connecting the inner lightning lightning rod projection to the outer lightning lightning rod projection; and

 a second photo mask, including a pattern for a contact hole located at a position corresponding to a location of the fine pattern on the first photo mask.

17. (New) A method of manufacturing a liquid crystal display (LCD) device, comprising:

 providing an upper substrate and a lower substrate;

 forming on the lower substrate a plurality of gate lines arranged in one direction at fixed intervals, a plurality of data lines arranged in another direction perpendicular to the direction of the gate line at fixed intervals to define pixel regions, a matrix of pixel regions each formed between the gate lines and the data lines;

 forming a pixel electrode in each of the pixel regions;

forming a thin film transistor in each of the pixel regions, said thin film transistors having a gate electrode connected to the gate line, a source electrode connected to the data line, and a drain electrode connected to the pixel electrode, for being turned on/off in response to a signal on the gate line, to provide a signal on the data line to the pixel electrode;

forming pads at the ends of the data lines and the gate lines; and patterning a lighting rod for at least one of the pads using a photomask, wherein said photomask comprises:

a shorting bar pattern and a plurality of pad patterns;
an outer lightning rod pattern connected to the shorting bar pattern;
an inner lightning rod pattern connected to one of the pad patterns;
projections from each of the outer and inner lightning rod patterns, and a fine pattern connected between the projections; and,
a fine pattern connected between the pad patterns.